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ABSTRACT

The basic potentials and requirements of multiscreen television presentations are explored in this paper. The major theoretical arguments for utilizing the multiscreen approach involve the progressively complex nature of the world: the instantaneousness of the moment, the experiential density, and the multiplicity of viewpoints. There is a communication deficiency in that the media are not used to their full communication potential to represent these existential phenomena. A second research approach was used to identify and analyze some of the structural elements and peculiarities of multiscreen presentations. Several conclusions were drawn from the preliminary findings of this research. First, divided screens are preferable to multiscreens. Second, a three-screen horizontal configuration is probably the most versatile arrangement, capable of presenting simultaneously the past, present, and future of one story; three spatial entities; and three separate, yet related, space-time environments for discussants. Finally, the perception of separate screens as an organic whole is accomplished by placing the screens as close as possible to each other, using theme, black screen, shot intensity, and vector structure to produce the gestalt. Technical aspects of production are also discussed. (HKM)

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TOWARD A MULTI-SCREEN TELEVISION AESTHETIC:

SOME STRUCTURAL CONSIDERATIONS

by Herbert Zettl

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For the past several years, my students and I have been exploring the basic aesthetic and dramaturgical potentials and requirements of multi-screen television presentations. This specific research was conducted within the wider field of mediakinetology, the study of audio and video media, and the production techniques involved therewith.[1]

In wrestling with the specific problems of multi-screen television presentation, we chose two basic research approaches: a "soft" and a "hard" approach.[2] The soft approach consists of a general, freewheeling delimitation of a theoretical field, a "thinking behind" a specific problem area. The hard approach concerns itself with the observation and investigation of specific elements within the field of inquiry. We used the soft approach to demonstrate the communication necessity for multi-screen television presentations, and the hard approach to identify and analyze some of the structural elements and peculiarities of multi-screen television presentations. To present the major, though preliminary findings of the hard approach within the context of the key thoughts of the soft approach is the purpose of this paper.

Here are some of the major arguments for multi-screen television that have evolved through the soft approach.[3]

We live in a world that is becoming progressively complex and ephemeral. Or, more likely, we are becoming progressively aware of the temporality and complexity of ourselves and our universe. The discoveries of Freud and Einstein have severely shaken our traditional and so comfortable view of a stable world, and of absolute and unchanging systems of thought and behavior. The clear distinctions between good and evil, cause and effect, being and nothingness, are no longer as clean-cut as we would like them to be, or as we still pretend they are in most of our educational and social institutions. The painful awareness of change as the only predictable factor in our existence has greatly undermined, if not rendered obsolete, such static and absolute systems as exemplified by Kant's categorical imperative.[4] In the shift from an idealistic to a pragmatic, and lately to a basically existential philosophy in which we have rearranged Descartes' "cogito, ergo sum"[5] into "sum, ergo cogito," three conspicuous and consistently recurring phenomena emerge: (1) the awareness of, and emphasis on, the instantaneousness of the moment, the fleeting character of the now, (2) the complexity and irreducibility of experience, the experiential density of our time,[6] and (3) the multiplicity of viewpoints.

Instantaneousness of the moment. In our efficiency-oriented society, time has become an important modern commodity. It has gone way beyond its former spiritual and ethereal importance. Today, time is money. Through our unprecedented awareness of time, we have become a mobile society: physically as well as psychologically. Time and motion have become almost the essence of life. We are, indeed, a now generation. While the traditional art forms, with the exception of music and dance, are hard-pressed to deal with this time consciousness, television seems almost the ultimate instrument with which to express our reverence for the now. Television allows clarification and intensification of an event while the event is still in the process of becoming. This clarified and intensified event can be experienced instantly by an almost unlimited number of widely dispersed people.[7]

Experiential density. Each moment, even the simplest one, is highly complex. Each moment that we experience is defined by our conscious or unconscious awareness of past and future events. And, moment after moment, we store up new experiences which, in turn, will influence others to come. Also, an event that seems perfectly simple from an objective point of view may reveal astonishing psychological depths when subjectively viewed from close up. Then there are all the simultaneous events that run parallel to the one

that we might want to single out for closer examination. Time-related through their simultaneous occurrence, such events are no longer random and tend to increase our experiential density. Isn't the whole idea of Zeitgeist nothing but a symbol for our experience and interpretation of the complex web of event relationships?

Multiplicity of viewpoint. Experiential density and multiplicity of viewpoint are closely related phenomena. As soon as we look at an event from different points of view, the event will reveal its different sides and, thus, its complexity. The "let's-look-at-it-from-another-point-of-view" approach is no longer a superior expression of educated tolerance, but an essential ingredient of present communication techniques. Multiplicity of viewpoints is a forceful manifestation of the age of relativity.

Reality is relative. So must be its representation on film and television. More importantly, the various points of view of an event, especially if shown simultaneously, can readily and forcefully bring to our attention the tenuousness of the cause-effect theory with which we feel so comfortable. When events are shown simultaneously rather than sequentially, we are no longer so certain about what caused what, or what was caused by what. Simultaneity of multiple viewpoint is a much-needed challenge to linear perception and thinking. After all, our consciousness

exists not only of precise causal logic, but also of a freewheeling Gestalt approach to sensations and events.[8]

But, are we properly prepared for dealing with such phenomena as the instantaneousness of the moment, the experiential density, and the multiplicity and relativity of viewpoints?

No, not really. The traditional arts, which for centuries have guided us and communicated assurance for the values of moral and social stability, seem oddly out of step with the requirements of the age of relativity and complexity. Many of the contemporary creations give testimony only to the social and cultural conditions of years past. At best, they comment critically on our present cultural, social, or personal aberrations. But they do precious little in helping us cope with the future, with the cybernetic demands of tomorrow.

Even the direct descendants of the cybernetic age—film, radio, television—do not seem to be able to exercise much leadership in preparing us for the demands of today and tomorrow, of properly dealing with, and assimilating, such existential phenomena as the instantaneousness of the moment, the experience density, and the multiplicity of viewpoint. One of the reasons for this communication deficiency is not that the media are insufficient in themselves, but that they are not used to their full communication potential.

Take television, for example. An old movie, even when shown on television, cannot be expected to make us sensitive to the importance of the instant moment and its psychological and social ramifications. Live television could, but not in a program format where a (more or less alive) newscaster reads yesterday's news.

Simple stories, in which one-dimensional people deal with one-dimensional problems are of no help to us, even when rendered low-definition on the small television screen. Our participation is restricted to making sense out of a hard-to-see picture of insignificant content. But let us not confuse such a perceptual activity with deep psychological viewer involvement. Straightforward plots that move in measured motion from cause to predictable effect, or the portrayal of people whose characterization on the screen is just slightly off the black-hat-for-the-bad-guy and the white-hat-for-the-good-guy variety, can hardly prepare us for dealing with the complex psychological makeup of ourselves, our family members, neighbors, and society at large. How can we take as a positive model, program fare that leads us to believe that virtue always triumphs over vice, good over evil, honesty over corruption, when in real life, away from the television set, we frequently experience the exact opposite? This is not to imply that there shouldn't be any positive moral standards. But life as shown on television

should at least match in some major points the life we actually experience every moment of our conscious and subconscious existence.

Some of the better soap operas are the exception. Although not noted for depth in thought and deed, they nevertheless explore with some consistency, though crudeness, the complexities of life through parallel plots and through characters who are sometimes good and sometimes not so good, sometimes happy and often sad. But again, the complexities of story and characters are confined to and by the single screen. Instead of having parallel plots, or various aspects of one plot, develop simultaneously on several screens, we must switch back and forth from one event to the other in the traditional "meanwhile-back-at-the-ranch" film fashion. The rearranging of simultaneous complexity, of all the impressions that happen around us at the same time, into a neat, step-by-step sequence is hardly the right way of preparing us to live comfortably with the enormous experiential density that crowds every moment of our existence. But this is exactly what we are doing when we show the viewer one thing after another, pretending that there is a single cause that leads inevitably to a single effect. Such presentation formats are not only misleading; they are wrong.

We could conceivably superimpose or key two or more events upon each other in order to show simultaneity and

complexity on a single screen. However, as soon as we need to go beyond an impressionistic image and convey specific information of each of the separate events, the complex screen image tends to produce confusion and communication noise instead of aesthetic event intensification. A split screen might be another way of showing several events or event portions on a single screen simultaneously. But again, the spatial definition of a single screen (its prominent borders) simply gives us a picture of a <u>divided</u> event, not that of multiple viewpoints, or multiple events. We will discuss this problem later in this paper. The use of multiple screens, however, seems to provide the necessary event clarity, since each event or event portion can be isolated on one of the screens without reducing the event complexity. We can look at, or at least scan, the various screens and their images all at once. Like in a mosaic, we work with highly discrete event instances that can combine into a larger whole. Without elaborating on the single screen versus multi-screen argument, let me give just three examples of multi-screen presentation.

<u>Example 1</u>. As we know, each experienced moment is conditioned by its past and future, by what we remember and anticipate. While such a relationship is extremely difficult to maintain in a sequential presentation format, it is

quite easily shown on multi-screens. We could, for example, show the present event on the middle screen of a three-screen arrangement, the past on the left, and the future on the right monitors. The viewer could then perceive at each instant the interaction of past, present, and future.

Example 2. Every sensitive television director has gone through some agony over deciding whether to select a close-up of the person speaking or the one listening during an interesting conversation. Often, the reaction—the one listening—is more telling of the total event than the action—the one doing the talking. In a two-shot, we usually are not close enough to reveal all the subtleties of facial expression. We must rely more upon what is said than how it is said, or how it is received by the other person. But if we put the one who is doing the talking in the space-time environment of one screen, and the one who is doing the listening in the space-time environment of a second screen, we can simultaneously show action and reaction from close up, while maintaining the separate personal space for each of the two people. Each moment has now its own action-reaction dialectic. In effect, we have the elements that can lead to a perceptual synthesis, an event Gestalt, that communicates more readily and more completely the various layers of the actual conversation than a sequential form of presentation on a single screen.

Example 3. Let us assume that we want to show two events that occur simultaneously but in separate locations. We can easily show event A on the left screen, and event B on the right screen, without having to cut back and forth between A and B, as is customary in single-screen presentations. Or we can show various parts of an event that takes place in a single location, such as various groups of people who have gathered in various corners of a living room during a party. If someone then walks from group to group, he has to move from screen to screen, thereby perceptually as well as psychologically entering, or even intruding in, the various space-time entities of the separate groups.

So much for the soft approach. Now let us move to some of the more specific problem areas and factors that we isolated in our preliminary hard approach. They are: (1) difference between divided screen and multi-screens; (2) number of screens and screen configuration; (3) screen Gestalt; (4) screen emphasis and vector structure; (5) montage; and (6) technical considerations.

Divided Screens versus Multi-Screens

What is the difference between a divided screen and multi-screens? For example, why use three or four monitors side by side when we can easily quad-split a

single television screen?

A split screen is simply a manipulation of a single screen. Splitting a single screen is dividing a simple space-time entity as represented by the borders of the screen into smaller units. Whatever we may compose into this single screen, a close-up of a hand or lines that divided the screen into four separate areas, we never depart from the singular space-time reference of the screen borders.

Multi-screens, on the other hand, represent an extension of the space-time entity of the single screen. Multi-screens represent in fact an organic extension of the television mosaic into several self-contained space-time units.[9] Rather than dividing a single screen into smaller units and thereby reducing each spatial field in size, we expand the field of the single television screen into several self-contained, yet interdependent space-time entities. Very much like the tiles of a mosaic, the multiple screens combine and expand into a complex, yet clarified and intensified screen Gestalt.

Place Fig. 1 about here

Number of Screens and Screen Configuration

The number of screens used in the multi-screen presentation or the way they are arranged depends entirely on the desired event mosaic, the complexity and aesthetic

requirements of the anticipated screen Gestalt. If, for example, we have a rather symmetrical screen pattern repeat itself in a canon-like way, we may want to stack up to twenty monitors in a simple rectangle. (Fig. 2a.) If the essence of an event happens to be its vertical movement, we can easily fulfill this aesthetic requirement by arranging the screens in a vertical way. (Fig. 2b.) A pyramid-like arrangement might be necessary to emphasize how multiple causes (shown on the bottom layer of monitors) lead to a single effect (top monitor of the pyramid apex). (Fig. 2c.) The traditional, and probably most versatile arrangement is the horizontal, three-screen configuration. (Fig. 2d.)

Place Fig. 2 about here

This three-screen arrangement seems to be sufficient for most of the aesthetic requirements of the multi-screen Gestalt. Perhaps it suits us simply because such a triparted configuration has been used throughout Western culture. After all, the triptych of the Roman writing tablet or the Gothic altar painting is quite similar to the triptych of the television screens.

In a very pragmatic way, the three screens seemed to be the most appropriate arrangement for my multi-screen experiments. In one experiment, the three monitors

represented simultaneously the past, present, and future of one and the same story.[10] In another experiment, the three screens were used as spatial entities, with the left screen showing the kitchen, the middle screen the den, and the right screen the living room. In my most recent experiment, which deals with the various levels of communication among women friends, I needed three separate monitors to establish separate, yet related, space-time environments for three women talking to one another.

The reason for the side-by-side arrangement was to establish an extended horizontal living space, very much like that of the cinemascope movie screen, and to neutralize as much as possible the graphic predominance of one screen over the other. Also, the screens were placed as close to each other as possible. As in a mosaic, where the spaces between the tiles are kept to a minimum to facilitate closure of the whole design, the close juxtaposition of the three screens was intended to facilitate the perception of a screen Gestalt.

Screen Gestalt

As indicated earlier, by screen Gestalt I mean the perception of separate screens as an organic whole. The preservation of separate space-time entities, as represented by the individual television screens, and the possibility of perceiving through closure the multi-screens as an organic

whole are important factors in the process of communicating complex events. The availability of separate, yet related, space-time entities as represented by the television screens allows us to clarify and intensify an event, or event details, without stripping the event arbitrarily of its complexities. We do not have to make a choice of showing either a close-up of the person talking or a close-up of the person listening. With multi-screens, we can show both persons simultaneously in their separate, yet related environments. Or take football, for example. We usually have to make the choice of either showing the tension of the game through separate sequential close-ups, or the pattern of the game through long, but energy-diffusing, shots. With multi-screens, we no longer have to make such a choice. We can show both points of view and leave it up to the viewer to choose one or the other, or to absorb both of them simultaneously.

So much for the theory. In our practical experiments we found, however, that sometimes we were able to perceive quite readily a screen Gestalt, while at other times the three screens remained as separate entities. Or, we found that our attention was occasionally drawn to one screen or the other, even while we perceived a screen Gestalt. Why? What are the specific factors that lead to a screen emphasis and to a screen Gestalt? The next section deals with these problem areas.

Screen Emphasis and Vector Structure

The effective use of multiple screens depends to a large extent on our ability to lead the viewer's attention to one or the other screen, or to all three (or more) simultaneously. Fortunately, we have some help from the structural principles in polyphonic music. While two or more melody lines develop horizcntally seemingly independent of each other, they combine at the same time vertically into a harmonic pattern. The composer can draw our attention to the melodic development in one voice, then in the other, and then to the third voice, while at the same time engrossing us in the total harmonic construct. What are the principles for multi-screen presentation that allow us to perceive a screen Gestalt (akin to the harmonic structure) while the screen events still develop individually (horizontal, melodic progression) out of their own organic logic? So far, we have isolated these structural factors: (1) theme, (2) black screen, (3) shot intensity, and (4) vectors.

Theme. Quite obviously, if we show the same story, subject, or closely related parts of a story on all three screens,[11] we tend to perceive the three screens as a unit. If we show different stories on each of the three screens, we may not perceive the three screens as separate entities. But even if the themes are dissimilar on the three screens,

a strong vector field can still persuade us to perceive the three screens as a graphic unit. We will talk about vectors in point four of this section.

Place Fig. 3 about here

Black screen. One very simple and obvious way of emphasizing on screen over the others is to keep the unimportant screens in black. Even if only one screen carries visual information, with the other two in black, we perceive an experience that is quite different from a single-screen presentation. The black screens seem to fulfill a function similar to that of a pause in a musical composition. If properly placed, the pause is not a hole in the structure, a felt absence, but rather a positive element. For example, in one of our experiments we showed, on two separate screens, two women who were phoning each other long distance. Since we wanted to intensify graphically the distance by which they were separated (San Francisco - Boston), we placed one on the left screen and the other on the right screen, with the middle screen in black. Thus, the middle screen acted as an important separation device, rather than a structural imperfection. The call was indeed perceived as long distance. (Fig. 4.)

Place Fig. 4. about here

Shot intensity. We can emphasize one screen over the others by making one screen image more intense than the others.[12] For example, if we place an extreme close-up on the middle screen and long shots on the left and right screens, the middle screen will inevitably look more prominent. If we move the close-up event on the left screen, with the middle and right screens displaying the long shots, our attention will be drawn to the left screen, providing that all three screens are equally static (showing nonmoving images, or an equal amount of motion). Similarly, if we render one of the screen events in color, while keeping the other screens monochrome, the color screen will most likely dominate our attention. As always, action is probably the most powerful attention-getter. If we have a great amount of motion on one screen and rather static images on the other two, the "action screen" will dominate. If each of the three screens is accompanied by its own sound, the audio can also function as a screen, or shot, intensifier. The usual sound intensification devices, such as increased volume, rhythmic acceleration, and so forth operate equally well for placing emphasis within the multi-screen structure.

Place Fig. 5 about here

While analyzing shot intensity relative to screen emphasis, we made an interesting discovery. There is no multi-screen close-up.[13] Or rather, we wondered what would constitute a multi-screen close-up. The traditional close-up, when stretched over three screens, does not necessarily constitute a multi-screen close-up. (Fig. 6.)

Place Fig. 6 about here

As we can see in Figure 6, the close-ups on the three screens do not combine into a larger close-up, a multi-screen close-up Gestalt. Worse, the traditional medium shot becomes so diluted on a three-screen arrangement that we perceive it more as a long shot than an accumulation of medium shots. (Fig. 7.)

Place Fig. 7 about here

Long shots tend to lack any aesthetic energy unless, however, they combine readily into a horizontal panorama, very much like a wide landscape shot on a cinemascope movie screen. (Fig. 8.)

Place Fig. 8 about here

As we can see, even the most basic, and so-well-understood shot definitions of a single screen aesthetic no longer apply to the multi-screen structure. Perhaps a three-screen close-up consists of a combination of three high-energy shots that combine somehow into a screen Gestalt of even higher magnitude. But exactly what the individual elements are, or have to be, for such a multi-screen close-up I am not sure at this point.

Vectors. The three basic types of vectors—graphic vectors, index vectors, and motion vectors—are essential structural elements in multi-screen television presentation. Through vectors we can draw the viewer's attention to any one of the multiple screens, or have the viewer perceive all screens together as a screen Gestalt. Although I have discussed these vector types previously in Sight-Sound-Motion,[14] let me briefly define them here once more for the sake of convenience.

A graphic vector is created by stationary pictorial elements that are arranged within the screen in such a way that they lead the eye in a particular direction. (Fig. 9.)

Place Fig. 9 about here

An index vector is created by something within the screen that points unquestionably in a specific direction. (Fig. 10.)

Place Fig. 10 about here

A motion vector is created by an object actually moving, or an object that is perceived to be moving on the screen. (Since the perception of motion is the key factor of a motion vector, it cannot be illustrated in a still picture.)

Since a thorough discussion of the multi-screen vector structure would go far beyond the intended scope of this paper, we will select just some of the phenomena that were especially prominent in our three-screen experiment.

Graphic vectors can make the three-screen space continuous or discontinuous. For continuous three-screen space, the graphic vector, or vectors, must continue through the screens, hopefully at the same screen portion. For example, if a continuous landscape appearing on the three screens is to be perceived as continuous (thereby facilitating a screen Gestalt), the horizonline must cut approximately the same screen portion on all three screens. (Fig. 11.)

Place Fig. 11 about here

If the graphic vectors (the horizonline on each screen) do not continue, but cut the screen portions at various heights, we will not, or only with difficulty,

perceive continous screen space—a screen Gestalt. (Fig. 12.)

Place Fig. 12 about here

In order to assure continuing graphic vectors throughout the three screens, the camera operators can either mark their viewfinders, or align their shots by superimposure in the preview position. When shooting out of sequence, we must mark the viewfinders of all cameras used with the horizonline, or whatever graphic vector we are trying to continue through the three screens.

If the shots on the three screens are decisively different, and if we do not want the viewer to apply closure of all three screens, we should make sure that the graphic vectors cut each screen at a different height. (Fig. 13.)

Place Fig. 13 about here

Even more than graphic vectors, index vectors can help us draw the viewer's attention to one or the other screen, or to all three screens simultaneously, facilitating closure for a screen Gestalt. If the index vectors are converging, we are more apt to perceive the three screens together than if they are diverging. (Fig. 14.)

Place Fig. 14 about here

In an experimental three-screen video essay, called Women: Face to Face,[15] we had to convey the simultaneous actions and reactions of three women friends during a soul-searching, intimate conversation. The single-screen presentation format was no longer adequate for this task. A three-shot on a single screen turned out to be much too low-powered aesthetically to be of much use. It simply did not reflect accurately the intenseness and depth of the conversation. A cutting back and forth among the three women proved visually attractive, but destroyed the electricity of the moment, the bond that existed among the women. We decided, therefore, to show each of the women close up on a separate screen. Now we could easily observe each of the women in her own space-time environment. Through a careful control of the index vectors, we were able to observe at the same time the overall structure and atmosphere of the conversation. Here are some examples of index vector control:

If the index vectors are continuing (in a screen-left direction) on all three screens, all three women seem to be talking away from one another. (Fig. 15.)

Place Fig. 15 about here

Z-axis index vectors, which are generally perceived as continuing and converging, no longer suggest an event relationship among the three screens.[16] When shown facing the camera, the three women remain isolated; they do not seem to be talking to one another. (Fig. 16.)

Place Fig. 16 about here

In order to have the women appear to be talking to one another, we can have two continuing vectors of adjacent screens converge with an index vector pointing in the opposite direction on the third screen. (Fig. 17a.) Or, we might show converging vectors on the two outside screens, with the center screen showing an index vector that favors either the left or the right screen. (Fig. 17b.) If the center screen shows a pure z-axis vector, the woman on the center screen appears no longer to be part of the conversation. (Fig. 17c.) The same is true for any other screen. While converging index vectors connect the screens, a z-axis vector, or a diverging vector isolates the screen and the event shown on that screen. (Fig. 17d.)

Place Figs. 17a-17d about here

Obviously, the camera setup and the staging of the conversation must take into consideration the necessary index vector field. The popular cross-shooting of two people in conversation no longer applies to the three-screen presentation, since the vector reversal would immediately isolate one screen and prevent closure to a screen Gestalt.

Motion vectors, too, behave differently on multi-screens than on single-screen presentations. As we all know, z-axis motion vectors, the motion away from and especially toward the camera, are some of the most powerful aesthetic devices on the single television screen. But like index vectors, z-axis motion vectors do not combine into a powerful effect on multi-screens. As a matter of fact, the z-axis motion vectors on three screens seem to have a reduced aesthetic energy compared with a single-screen z-axis motion vector. (Fig. 18.)

Place Fig. 18 about here

On a three-screen arrangement, lateral motion attains new prominence. A person who walks from screen to screen, or reaches from one screen into another, creates a startling aesthetic effect. Apparently, the spaces between the separate space-time entities as represented by the screens act as motion catalysts, as aesthetic energizers, very much like a

cut in a single-screen montage sequence. (Fig. 19.)

Place Fig. 19 about here

As with index vectors, z-axis motion vectors are no longer perceived as continuing or converging. Rather, we tend to perceive three separate motions. This phenomenon is of course quite contrary to our single-screen perceptual habits.

Multi-screen Montage

The separate space-time entities as represented by the individual screens provide the potential for powerful simultaneous montages. Contrary to the filmic montage, which must occur sequentially, one shot after another,[17] the multi-screen montage happens simultaneously. The possibility of showing two or more events, or event parts, simultaneously on several screens is especially congruent to the idea of the sectional analytical montage[18] which offers a multiple viewpoint of one single moment. On a single screen, we are forced to either superimpose the various points of view of the single moment or, as is more common, to show one point of view after another. What we are doing is to pretend that simultaneity can be stretched out into a logical sequence of events. What we are (erroneously) implying is that we can deal with the

experiential density of simultaneous events quite easily by looking at one thing at a time. Such a simplistic aesthetic interpretation of experiential density is certainly not conducive to helping us manage complex situations. (Fig. 20.)

Place Fig. 20 about here

Both forms of the idea-associative montage, the comparison montage and the collision montage, are also well suited for multi-screen presentation.[18] For example, for the comparison montage we could show a caged animal on one screen and people behind bars on the other two, intensifying the general theme of inhumanity in both cases. Or, as a collision montage, we could collide the prisoners behind bars with young children running freely through the wet sand of the ocean beach. Of course, such montage effects need to be handled with caution, whether we use a single-screen or multi-screen presentation format. (Fig. 21.)

Place Fig. 21 about here

Our preliminary "hard" approach suggests furthermore that the rhythmic requirements, the cutting rhythms and the overall pacing of multi-screen presentations, are quite

different from those of the single screen. However, our analysis of multi-screen requirements has not as yet progressed to a hypothesis stage. I will report on this specific time aspect in a future paper.

Technical Aspects

Technically, we found that the production for three-screen presentation proved to be at least three times as difficult as for the single screen. The pre-production activities must include a careful analysis of all shots as they appear on the three screens. The storyboarding and especially the designing of a vector field (Fig. 22) are essential prerequisites for successful multi-screen production.

Place Fig. 22 about here

Cameras must be assigned to the specific VTR's that represent the various screens. In our three-screen experiments, we had a variety of camera assignments for each VTR. For example, for some scenes we patched a single camera into one of the three VTR's, while the other cameras (up to six) remained switchable among themselves and between VTR 2 and VTR 3 (representing screens 2 and 3). The switching was done either on two switchers, or on two separate switching buses (program and preview). Sometimes we isolated the audio

for each screen and fed it into each of the three VTR's, and sometimes we fed all three VTR's with the same audio.

The most serious problems of the three-screen production were encountered during post-production editing. If the tapes are to run synchronously, precise time-code editing is a must. Without time-code readouts, we found that we had cut one tape 15 frames shorter than the second tape, and the third 20 frames longer than the first. After a few edits, the three tapes were grossly out of sync.

Worse, the editing decisions cannot be based upon the image of one tape only. The images and their vector structure of all three tapes must be considered for each edit. While the edited version on one screen may fulfill all the requirements of a single-screen aesthetic, it may not be compatible at all with the vector fields of the other two screens. If we have people walking from screen to screen, we may inadvertently edit one tape in such a way that the motion vector is not carried to its conclusion. For example, it could happen that we see a woman walk from the left screen to the center screen, and then suddenly disappear, as though she had fallen into the crack between the center and right screens, only to disappear suddenly from the third screen, simply because the screen 3 tape was edited to conform to the time requirements of the other two tapes rather than their vector structure or event continuity.

Even with the availability of computer-assisted off-line editing, in which the vector structure at the editing points can be visualized on all three screens through freeze frames, I recommend against extensive post-production work. The more effort that is put into the initial production preparation, the easier it will be later on to cope with the three-screen material.

Obviously, each of the structural factors mentioned thus far needs further investigation and careful scrutiny under a variety of production conditions. Until a multi-screen aesthetic has been developed and established, we must consider the results of the hard research approach as tentative, even if they are examined within the context of the soft approach. But such preliminary studies are necessary in order to discover the dramaturgical potentials and requirements of multi-screen television presentations. They are essential if we ever hope to develop a valid and useful multi-screen aesthetic.

***

Footnotes

[1]Mediakinetology as a field of study was developed as part of a Seminar in Experimental Production at San Francisco State University (BCA 740).

[2]Herbert Zettl, "New Directions in Mass Communication Research," a paper delivered at the Annual Convention of the Western Speech Communication Association, Albuquerque, New Mexico, November 20, 1973.

See also Chikio Hyashi, "Methodological Problems in Mass Communication Research," Studies in Broadcasting, ed. by H. Eguchi and K. Sata (Tokyo: NHK, The Theoretical Research Center and The Radio and TV Culture Research Institute, 1973), pp. 121-151.

[3]For a more complete discussion of the "soft" approach to multi-screen television, see Herbert Zettl, "New Directions in Mass Communication Research: One Year Later," a paper delivered at the Annual Convention of the Western Speech Communication Association, Newport Beach, California, November 28, 1974. See also Herbert Zettl, Sight-Sound-Motion: Applied Media Aesthetics (Belmont: Wadsworth Publishing Company, 1973).

[4]Immanuel Kant, Kritik der praktischen Vernunft (Berlin: Berliner Akademie der Wissenschaften, 1902).

[5]René Descartes, Discours de la méthode, Vol. IV, Sec. 3, 1637.

[6]The term "experiential density" was coined by Lynda Egener, teaching assistant for the BCA 740 seminar. She also investigated the problem area of experiential density in television.

[7]Zettl, Sight-Sound-Motion, pp. 214-215.

[8]Robert E. Ornstein, The Psychology of Consciousness (San Francisco: W. H. Freeman & Co., 1972).

[9]Zettl, Sight-Sound-Motion, p. 266.

[10]As applied in the experimental three-screen television play, "Behold Each Precious Moment." This presentation is discussed in Zettl, "New Directions in Mass Communication Research: One Year Later."

[11]Ibid.

[12]Zettl, Sight-Sound-Motion, pp. 223-229.

[13]A problem area defined and investigated by Jack Schaeffer, M.A. candidate, BCA Department, San Francisco State University.

[14]Zettl, Sight-Sound-Motion, pp. 142-145.

[15]Experimental three-screen television presentation, "Women: Face to Face," produced by Lynda Egener, directed by Herbert Zettl, as part of an experimental television production workshop, BCA 595 (2), Fall semester 1975-76.

[16]Zettl, Sight-Sound-Motion, pp. 302-303.

[17]Compare Sergei Eisenstein, Film Form and Film Sense, in one volume, ed. and tr. by Jack Leyda (New York: World Publishing Company, 1957). See also Zettl, Sight-Sound-Motion, pp. 311-323.

[18]Zettl, Sight-Sound-Motion, pp. 318-320.

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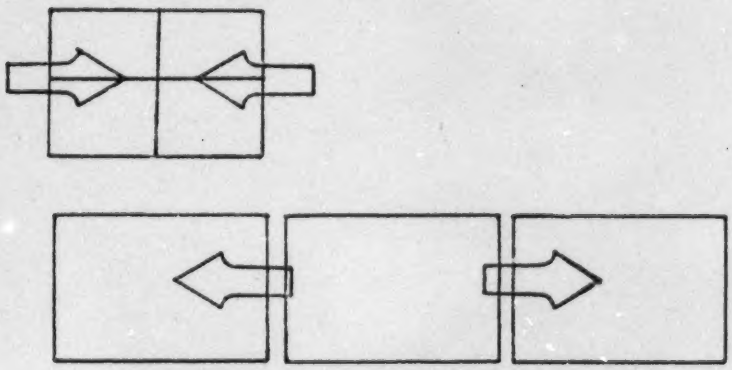

Fig. 1
Divided Single Screen
and Multi Screens

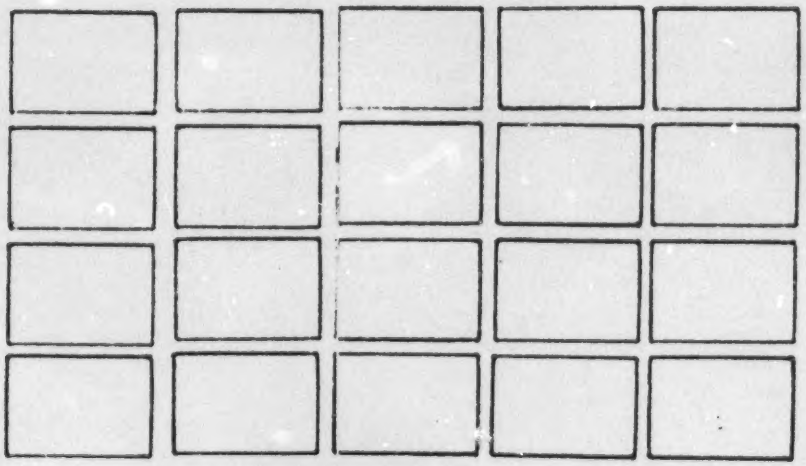

Fig. 2a

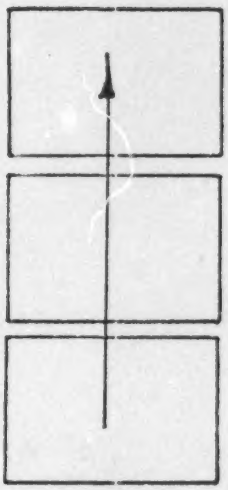

Fig. 2b

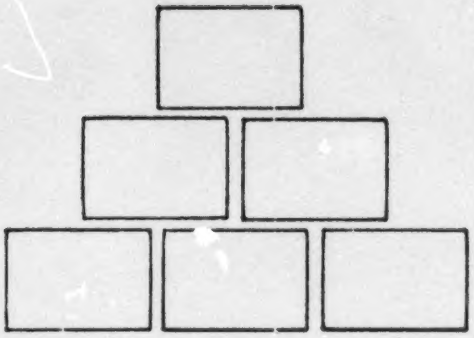

Fig. 2C

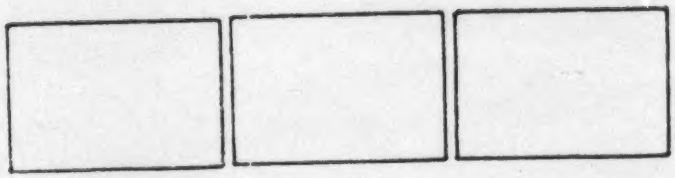

Fig. 2d

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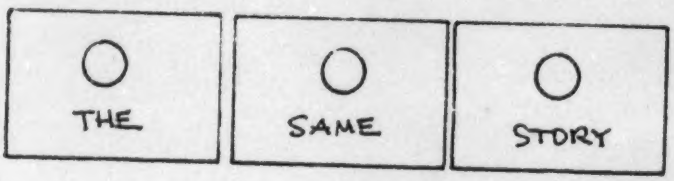

Fig. 3
Thematic Relationship

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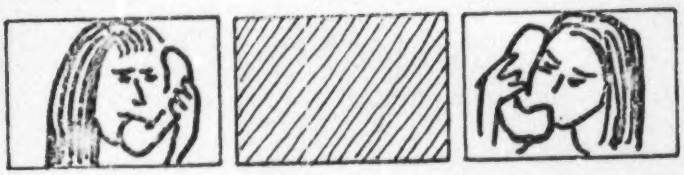

Fig. 4
Black Screen

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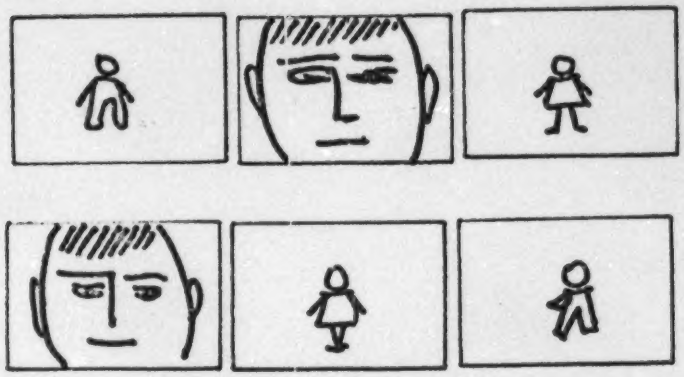

Fig. 5
Shot Intensity

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Fig. 6

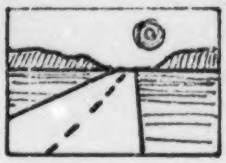
Close-up on 3 Screens

Fig. 7

3. Screen Medium Shots

Fig. 8

3-Screen Long Shots



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Graphic Vector

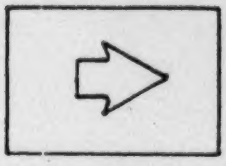

Fig. 10
Index Vector

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Fig. 11

Continous Screen Space
through Graphic Vectors

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Fig. 12

Discontinuous Screen Space

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Fig. 13

Discontinuous Graphic Vectors

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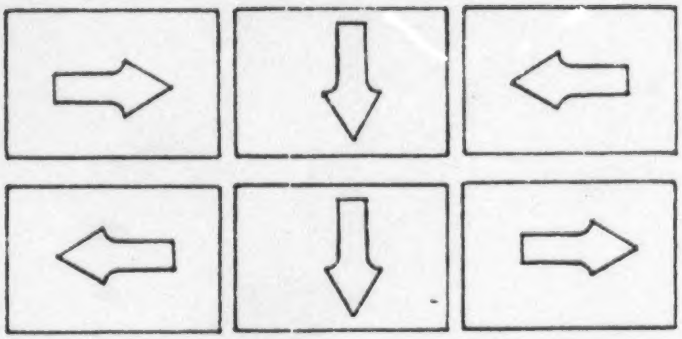

Fig. 14
Converging and Diverging
Index Vectors

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Fig. 15
Continuing Vectors

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Fig. 16

2- Axis Index Vectors

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Fig. 17a

Index Vectors
Conneating 3 Screens

Fig. 17b

Index Vectors Connecting 3 Screens

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Fig. 17C

Index Vectors Connecting
2 - Screens Only

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Fig. 17d
Index Vectors Connecting
2-Screens Only

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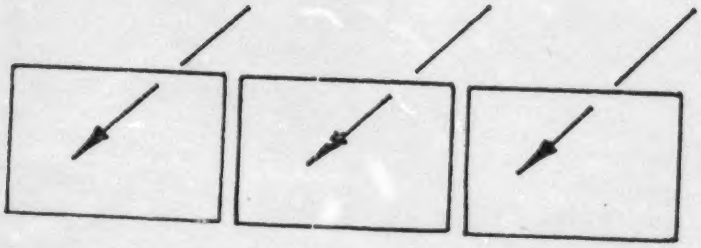

Fig 18

2-Axis Motion Vectors

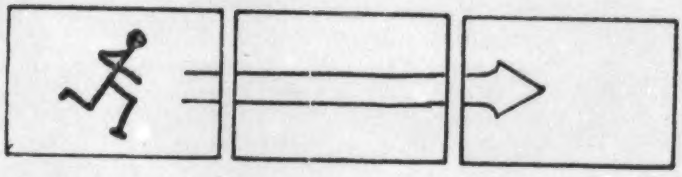

Fig. 19

Lateral Motion

Fig. 20

Multi-Screen Montage:
Sectional

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Fig. 21
Multi-Screen Montage

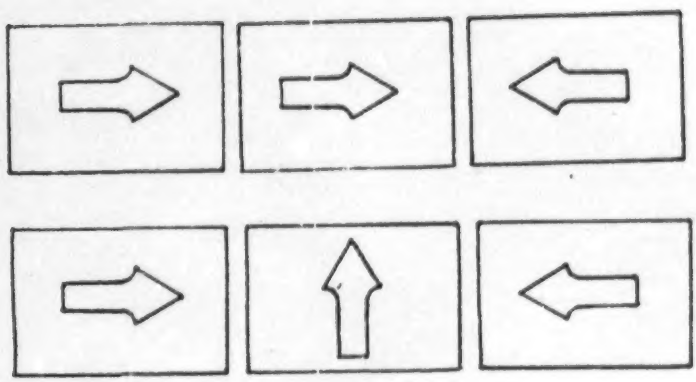

Fig. 22

Vector Field Design